(No Model.)

J. W. MAXWELL.

SAW GUIDE.

No. 357,678. Patented Feb. 15, 1887.

Fig 1.

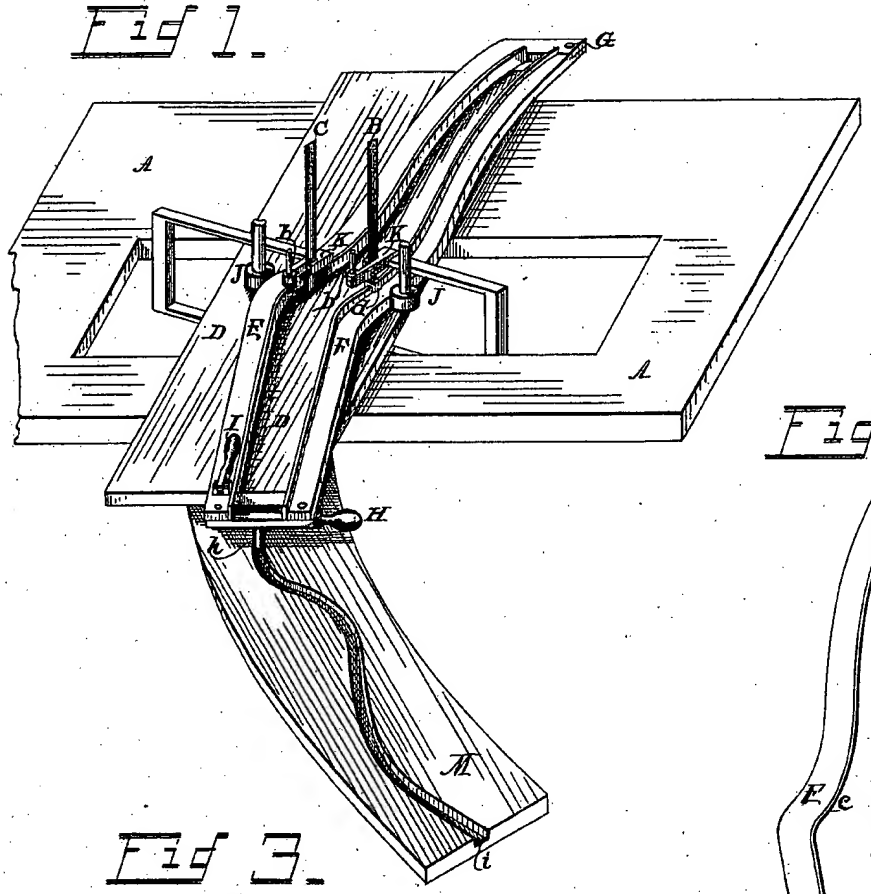


Fig 2.

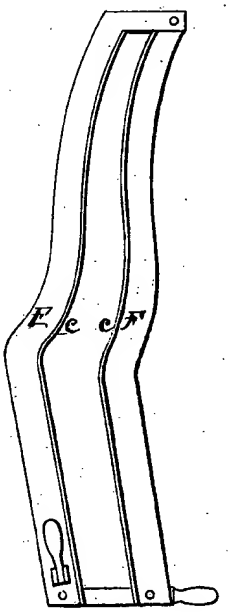
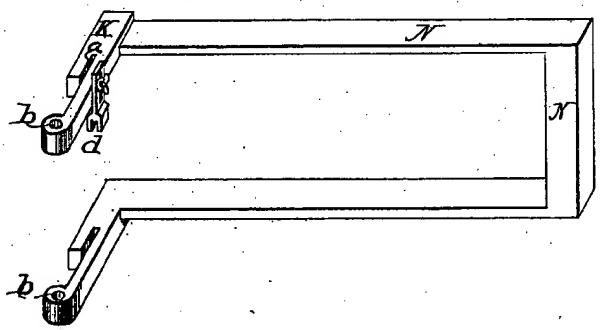


Fig 3.



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UNITED STATES PATENT OFFICE.

JOSEPH WILEY MAXWELL, OF LOUISVILLE, KENTUCKY.

SAW-GUIDE.

SPECIFICATION forming part of Letters Patent No. 357,678, dated February 15, 1887.

Application filed May 19, 1886. Serial No. 202,693. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH WILEY MAXWELL, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Band-Saw Guides; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to that class of devices which are used for guiding the work on band-saw machines; and its object is, first, to provide means whereby work may be sawed to a pattern without requiring guide-lines to be marked on the work; secondly, to provide means whereby two band-saws, or the two vertical portions of one band-saw, may be guided to cut the two edges at once of a single piece, whether the edges are parallel or not, straight or curved, or of different degrees of curvature—such, for instance, as chair-legs, chair-bottoms in segments, rockers, plow beams and handles, wheel-fellies, &c.; thirdly, in means whereby a pattern conforming to the piece to be cut, being passed through between or beside the saws with the lumber while it is being sawed, may guide the saws, respectively, to follow the curvature of its two edges; and, fourthly, in means whereby the rear end of the form-pattern may be guided so as to equalize the inclination of both saws relatively to a center line as nearly as possible at all times.

To this end my invention consists in the construction and combination of parts forming band-saw guides, hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of a portion of a saw-table, showing portions of a band-saw in connection with the main features of my invention. Fig. 2 is a plan view of one member of my saw-guides, consisting of the form-pattern for a chair-leg. Fig. 3 is a perspective view of another member of my saw-guides, consisting of the blade-guide proper.

A represents the saw-machine table.

B represents the downcut side of the band-saw blade, and C represents the upcut side thereof; or, for all purposes of this invention, B and C might represent two independent saw-blades running either up or down or reciprocating, and they may herein be referred to as two saws, the only characteristics required of the saw or saws being a blade narrow enough to clear its own passage around the required curves and elastic enough to bear twisting to follow the curves. The common band-saw meets these requirements, and a very long scroll-saw might do the same.

D represents a piece of lumber being sawed. In the present case the work represented is the sawing of a chair-leg on both its curved edges at one movement of the lumber along or through the machine.

E represents one side, and F the other side, of the chair-leg form-pattern, the two sides being secured together at one end by a pivot or hinge, G, and at the other end by a latch, H. By unhooking this latch and opening the form-pattern it may be placed around the saws upon the bench, ready for service. The pattern is secured upon the lumber D by any usual dogs projecting from its lower side, one of the dogs being provided with a binding-lever, I, whereby it may be loosened from the work, so that the pattern may be set in a new place after each piece is cut from the lumber, and then be forced into engagement again with the lumber. The outer edges of the parts E and F are shaped to correspond, respectively, to the edges of a chair-leg or other work to be shaped by sawing. This double pattern is suitable for use with any two saws which are adapted to be moved transversely to and fro into different vertical planes while at work—such, for instance, as shown in my Patent No. 339,797, on which I have made new improvements, for which I have made application of even date herewith for a patent, in which application I have claimed the combination of some devices herein shown with parts of the machine whose operation is effected by the said devices.

J represents rollers to travel on the edges of the form-pattern, and they are to be mounted on the two carriages which guide the two portions B and C of the saw. These carriages may be pressed constantly toward the former by weights and straps guided by properly-located pulleys.

K represents the saw-guides proper, pro-

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vided with vertical grooves *a*, through which the saw blade or blades run. These guides are pivoted to the saw-carrying frames at points *b*, respectively, in front of each blade, both above and below the saw-bench, by which means that portion of the saw-blade between the upper and lower portions of each guide may be twisted in a plane to the right or left, out of the normal plane of the saw-blade, to conform to the curves of the pattern. I have devised and tried various ways for causing these guides K to follow the curves of the pattern. A very effective device consists of a flange, *c*, projecting upward from each part E and F of the form-pattern, and a slotted follower, *d*, secured to the guide K and fitted to straddle the flange *c*. The flange conforming to that part of the pattern to which it is secured passing through the follower *d* causes it to oscillate the guide K on its pivot *b*, thereby twisting the saw-blade to positions continually tangent to the curve of the passing pattern, and the sum of these tangents is the exact path or kerf of the saw. A groove instead of the flange *c*, and a tongue fitting it, instead of a slot for the follower *d*, would be a mechanical equivalent thereof, its object being in every case to guide the saw by twisting the blade thereof to positions tangent to a passing pattern. The follower *d* is made vertically adjustable on the saw-guide to fit the pattern. The upper and lower portions of the guide K are connected by a yoke, N, to become one piece. To enable this guide-pattern E F to be pushed through the machine, so as to equalize the labor at all times on the two saws, I provide a grooved or ribbed pattern-guide, M, to be secured to the under side of the saw-machine table A, to project therefrom, and I provide a tongue on the under side of the rear end of the form-pattern to engage and follow the groove or rib. The groove *i* in the pattern M may readily be made to correspond with the general contour of the form-pattern by placing a pencil instead of the follower *h*, then let the sawyer very carefully guide the form-pattern by his eye while sawing one chair-leg or other work, and afterward cut the groove *i* as marked by the pencil. In some cases, where the work is very wide, it may be necessary to let the saws work at the sides of the form-pattern instead of between it; but that is only a question of adaptation on the part of the mechanic of the principles herein set forth.

It is evident that the principal features of this invention might be used to some advantage with a machine having only a single cutting saw-blade; but its main purpose being to saw to a pattern both edges at once of a piece of work, it is necessarily used in connection with a double sawing-machine whose two saw-blades move laterally to follow the varying width of the pattern, as hereinbefore described. Such a machine being the subject of a cotemporary application for a patent, no claim is herein laid to anything but the saw-guides, as follows:

What I claim herein, and desire to secure by Letters Patent, is—

1. The combination, in saw-guides, of two form-patterns arranged side by side at some distance apart and separably secured together at their ends, each of the said patterns being shaped on one edge in conformity with the work to be sawed and adapted to be secured to the work, substantially as shown and described.

2. The combination, with a form-pattern shaped to conform to the work to be sawed and adapted to be clamped thereto, of pivoted saw-guides slotted to receive the saw-blade and provided each with a follower adapted to follow the form-pattern, substantially as shown and described, whereby the saw-blade will be twisted by the passing form-pattern, as set forth.

3. The combination of a saw form-pattern shaped at its edges in conformity with the work to be sawed, a pivoted slotted guide to receive the saw-blade, a flange upon the form-pattern conforming with its edge, and a follower attached to the saw-guide and adapted to engage and follow the said flange, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH WILEY MAXWELL.

Witnesses:
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